May 25, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

James Moncrieff Arnott, Esq., and Samuel Elliott Hoskins, M.D., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Meteorological Journal, from January to April inclusive, 1843, kept at Guernsey." By Samuel Elliott Hoskins, M.D. Communicated by Samuel Hunter Christie, Esq., Sec. R.S.

2. "On the Respiration of the Leaves of Plants." By William Haseldine Pepys, Esq., F.R.S.

The author gives an account of a series of experiments on the products of the respiration of plants, and more particularly of the leaves; selecting, with this view, specimens of plants which had been previously habituated to respire constantly under an inclosure of glass; and employing, for that purpose, the apparatus which he had formerly used in experimenting on the combustion of the diamond, and consisting of two mercurial gasometers, with the addition of two hemispheres of glass closely joined together at their bases, so as to form an air-tight globular receptacle for the plant subjected to experiment.

The general conclusions he deduces from his numerous experiments conducted during several years, are, first, that in leaves which are in a state of vigorous health, vegetation is always operating to restore the surrounding atmospheric air to its natural condition, by the absorption of carbonic acid and the disengagement of oxygenous gas: that this action is promoted by the influence of light, but that it continues to be exerted, although more slowly, even in the dark. Secondly, that carbonic acid is never disengaged during the healthy condition of the leaf. Thirdly, that the fluid so abundantly exhaled by plants in their vegetation is pure water, and contains no trace of carbonic acid. Fourthly, that the first portions of carbonic acid gas contained in an artificial atmosphere, are taken up with more avidity by plants than the remaining portions; as if their appetite for that pabulum had diminished by satiety.

3. A paper was also in part read, entitled "On the minute Structure of the Skeletons or hard parts of the Invertebrata." Part II. By William B. Carpenter, M.D. Communicated by the President.

June 1, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Sir John P. Boileau, Bart., and the Rev. John Wright, M.A., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Magnetic-term Observations for January, February, March, and April 1843," made at the Observatory at Prague, by Professor Kreil. Communicated by Samuel Hunter Christie, Esq., Sec. R.S.

2. "Hourly Meteorological Observations, taken between the hours of 6 A.M. March 17th, 1843, and 6 A.M. of the following day, being the period of the Spring Tides of the Vernal Equinox, at Georgetown, British Guiana." By Daniell Blair, Esq., the Colonial Surgeon, transmitted by Henry Light, Esq. Communicated by the Lords Commissioners of the Admiralty.

3. "On the minute structure of the Skeletons, or hard parts of Invertebrata." By W. B. Carpenter, M.D. Communicated by the President. Part II. "On the structure of the Shell in the several families and genera of Mollusca."

The author here gives in detail the results of his inquiries into the combinations of the component elements of shell as they are met with in the several families and genera of the Mollusca; and considers all these results as tending to establish the general proposition, that where a recognizable diversity presents itself in the elementary structure of the shell, in different groups, that diversity affords characters which indicate the natural affinities of the several genera included in those groups, and which may therefore be employed with advantage in classification, and in the recognition and determination of fossils.

The Society then adjourned over the Whitsun Recess, to meet again on the 15th instant.

June 15, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The following papers were read, viz.—

1. "On the supposed developement of the Animal Tissues from Cells." By James Stark, M.D., F.R.S.E. Communicated by James F. W. Johnston, Esq., M.A., F.R.S.

The author controverts the prevailing theory of the developement of animal tissues from cells, and denies the accuracy of the microscopical observations on which that theory is founded, as regards the anatomy of the adult as well as of the fœtal tissues. He asserts that at no period of fœtal life can rows of cells be discovered in the act of transformation into muscular fibres: and he denies that these fibres increase either in length or in thickness by the deposition of new cells. He contends that the ultimate filaments of muscles, as well as all the other tissues of the body, are formed from the fibrinous portion of the blood, which is itself composed of globules that are disposed to cohere together, either in a linear series, so as to form a net-work of fine filaments, or in aggregated masses of a form